OIPE IAP68
OCT 17 2005
PATENT & TRADEMARK OFFICE

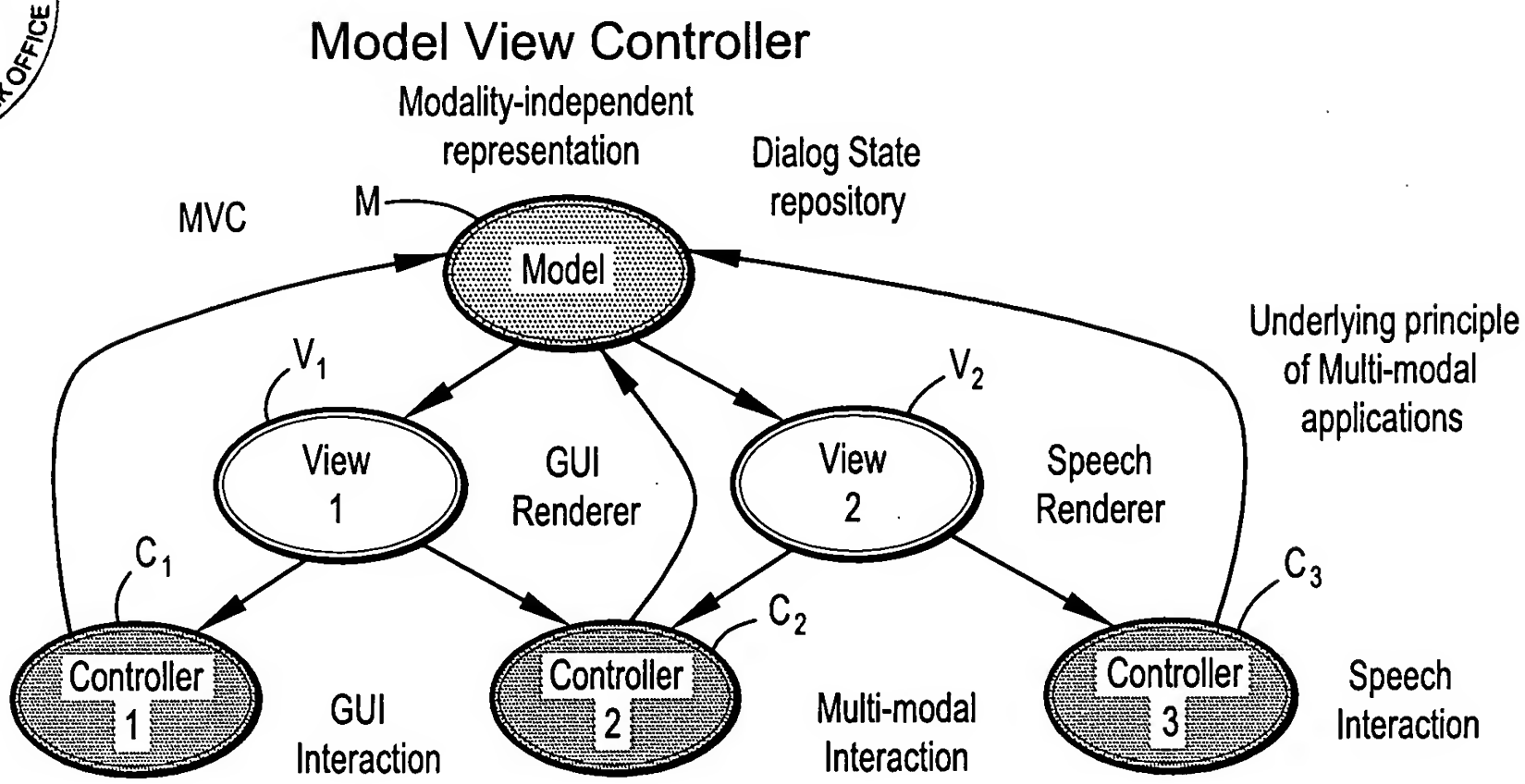

FIG. 1

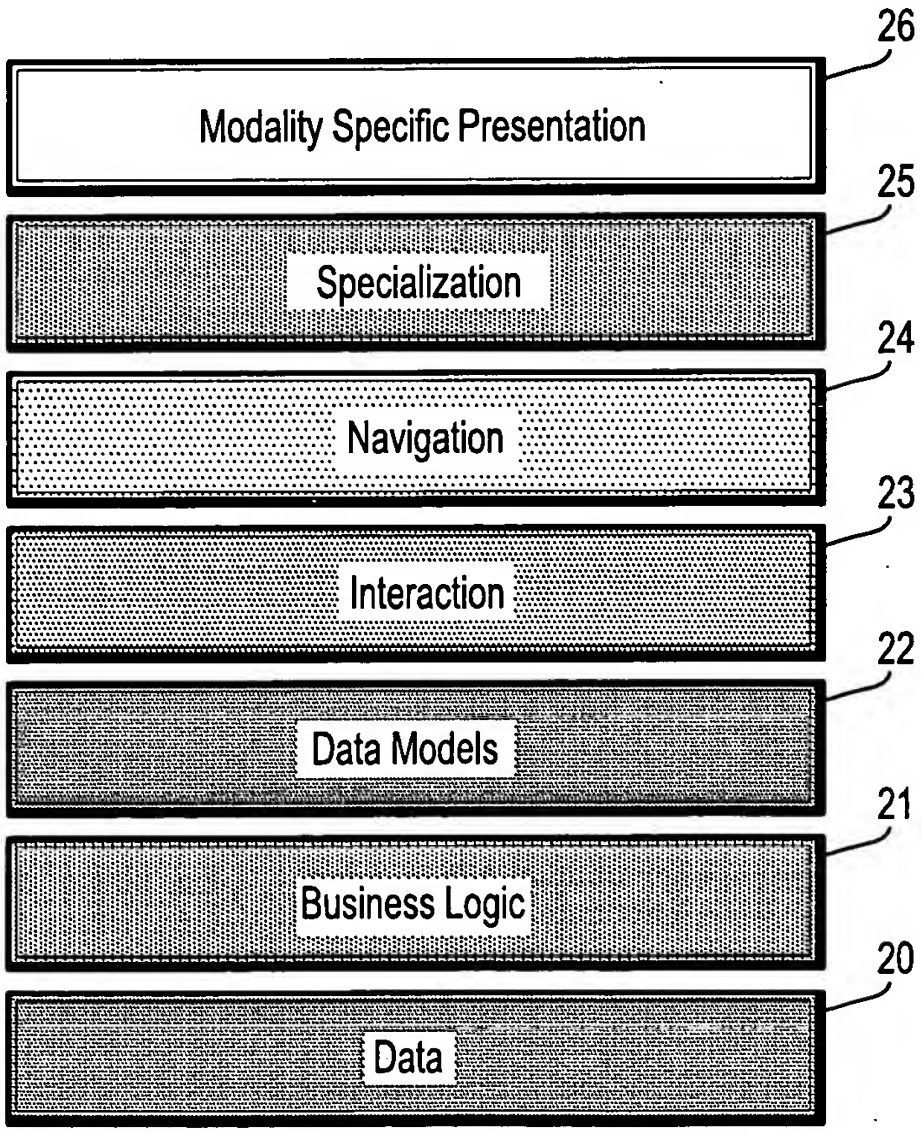

FIG. 2

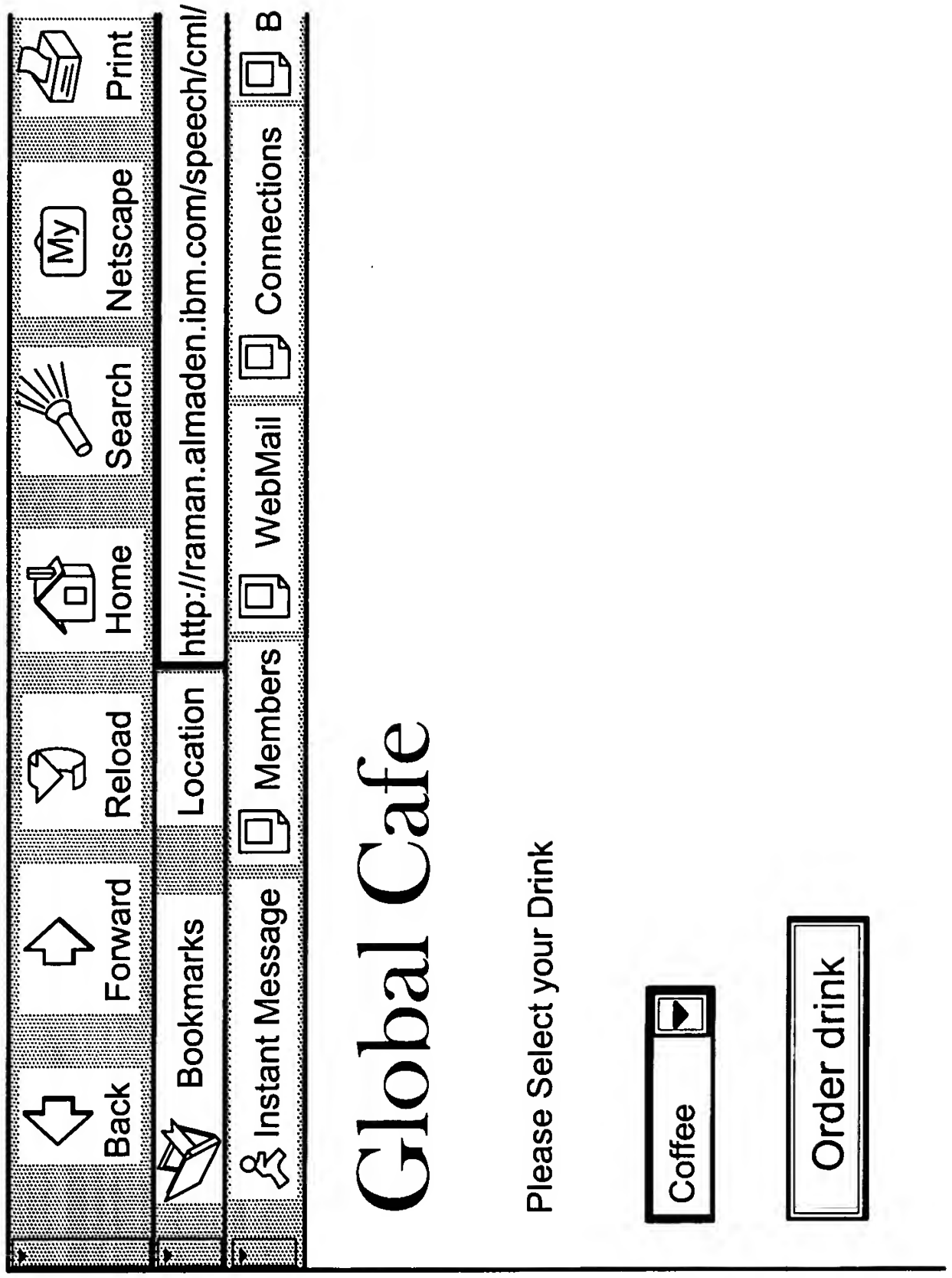
Back
Forward
Reload
Home
Search
My Netscape
Print
Bookmarks
Location
http://raman.almaden.ibm.com/speech/cml/
Instant Message
Members
WebMail
Connections
B
Global Cafe
Please Select your Drink
Coffee
Order drink

FIG. 3

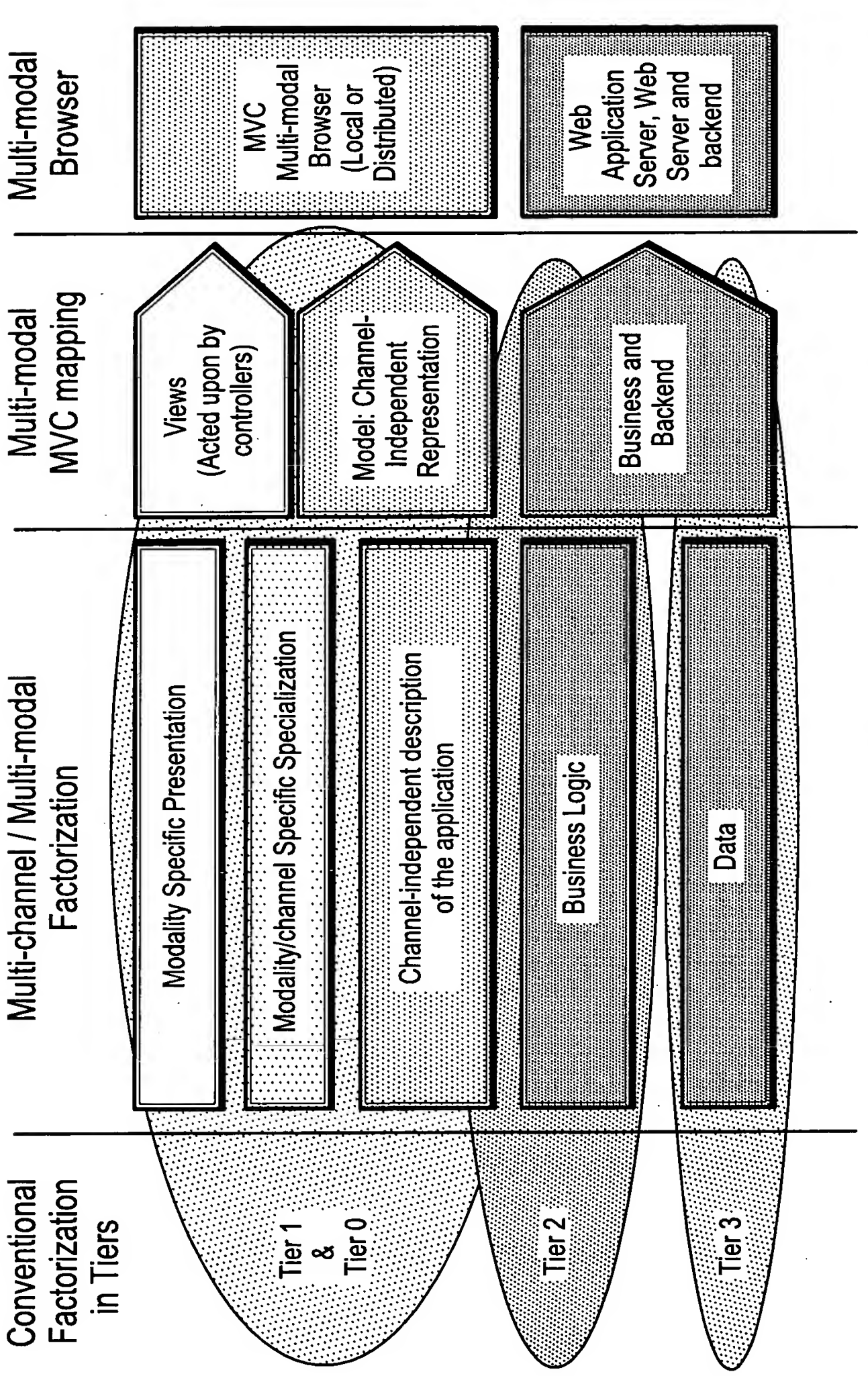
Multi-modal Browser
MVC Multi-modal Browser (Local or Distributed)
Web Application Server, Web Server and backend
Multi-modal MVC mapping
Views (Acted upon by controllers)
Model: Channel-Independent Representation
Business and Backend
Multi-channel / Multi-modal Factorization
Modality Specific Presentation
Modality/channel Specific Specialization
Channel-independent description of the application
Business Logic
Data
Conventional Factorization in Tiers
Tier 1 & Tier 0
Tier 2
Tier 3
Tiers positioning with respect to MVC paradigm and single authoring programming model

FIG. 4

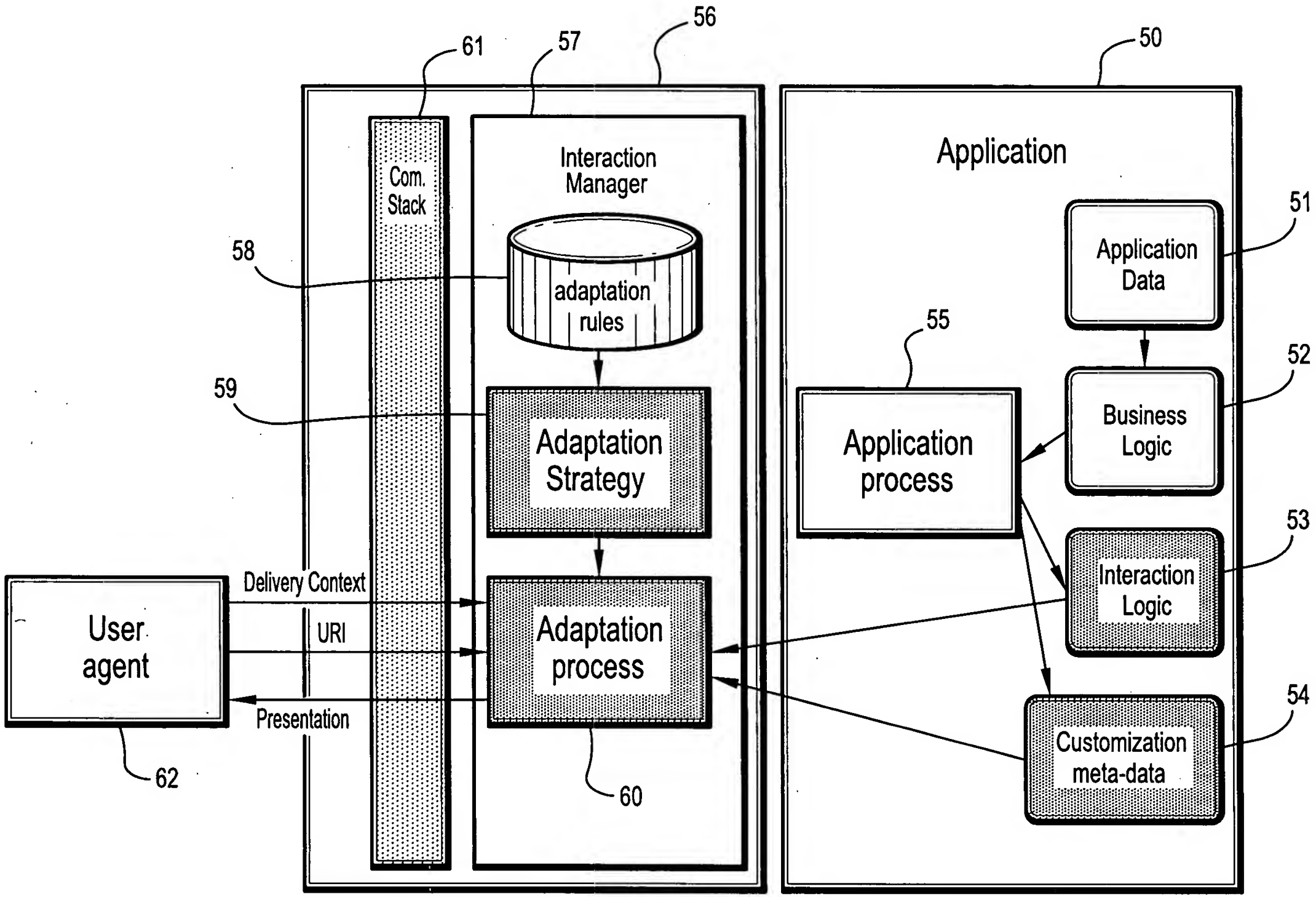
56
61
57
50
Com. Stack
Interaction Manager
Application
58
adaptation rules
Application Data
51
55
59
Adaptation Strategy
Application process
Business Logic
52
53
Delivery Context
URI
Presentation
User agent
Adaptation process
Interaction Logic
54
Customization meta-data
62
60

FIG. 5

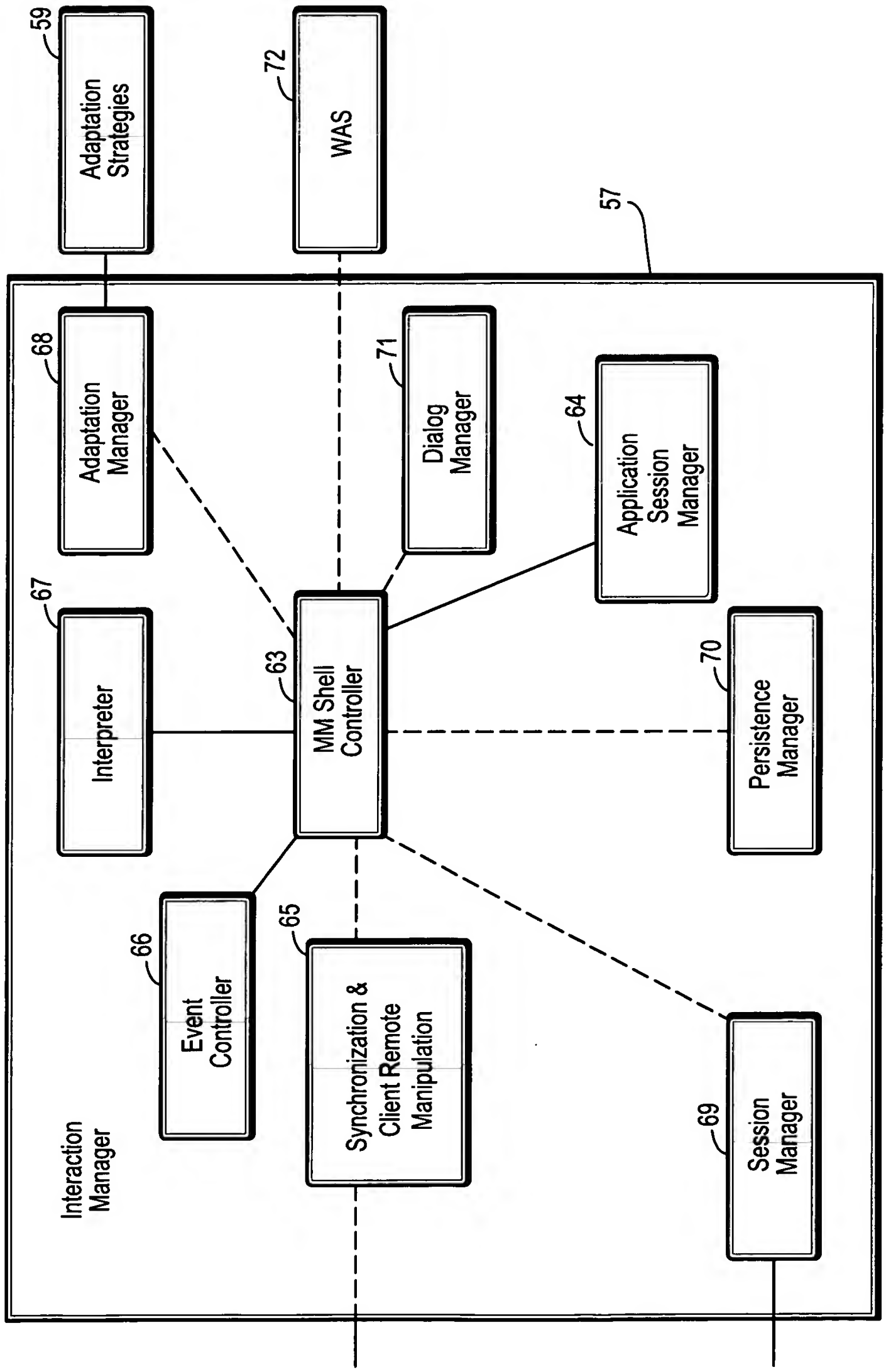
59
Adaptation Strategies
72
WAS
57
68
Adaptation Manager
71
Dialog Manager
64
Application Session Manager
67
Interpreter
63
MM Shell Controller
70
Persistence Manager
66
Event Controller
65
Synchronization & Client Remote Manipulation
69
Session Manager
Interaction Manager

FIG. 6

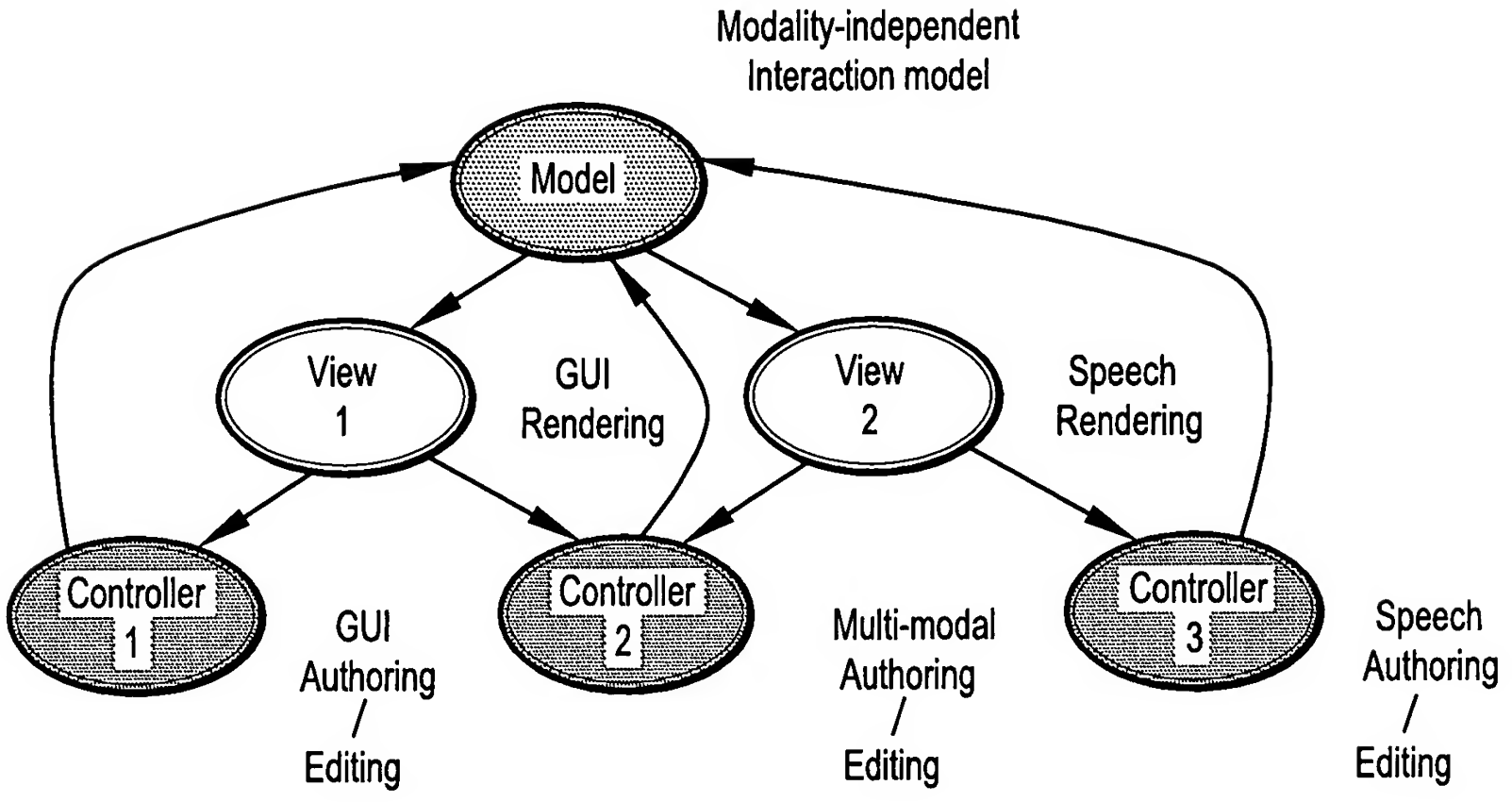
Modality-independent
Interaction model
Model
View
1
GUI
Rendering
View
2
Speech
Rendering
Controller
1
GUI
Authoring
/
Editing
Controller
2
Multi-modal
Authoring
/
Editing
Controller
3
Speech
Authoring
/
Editing

FIG. 7

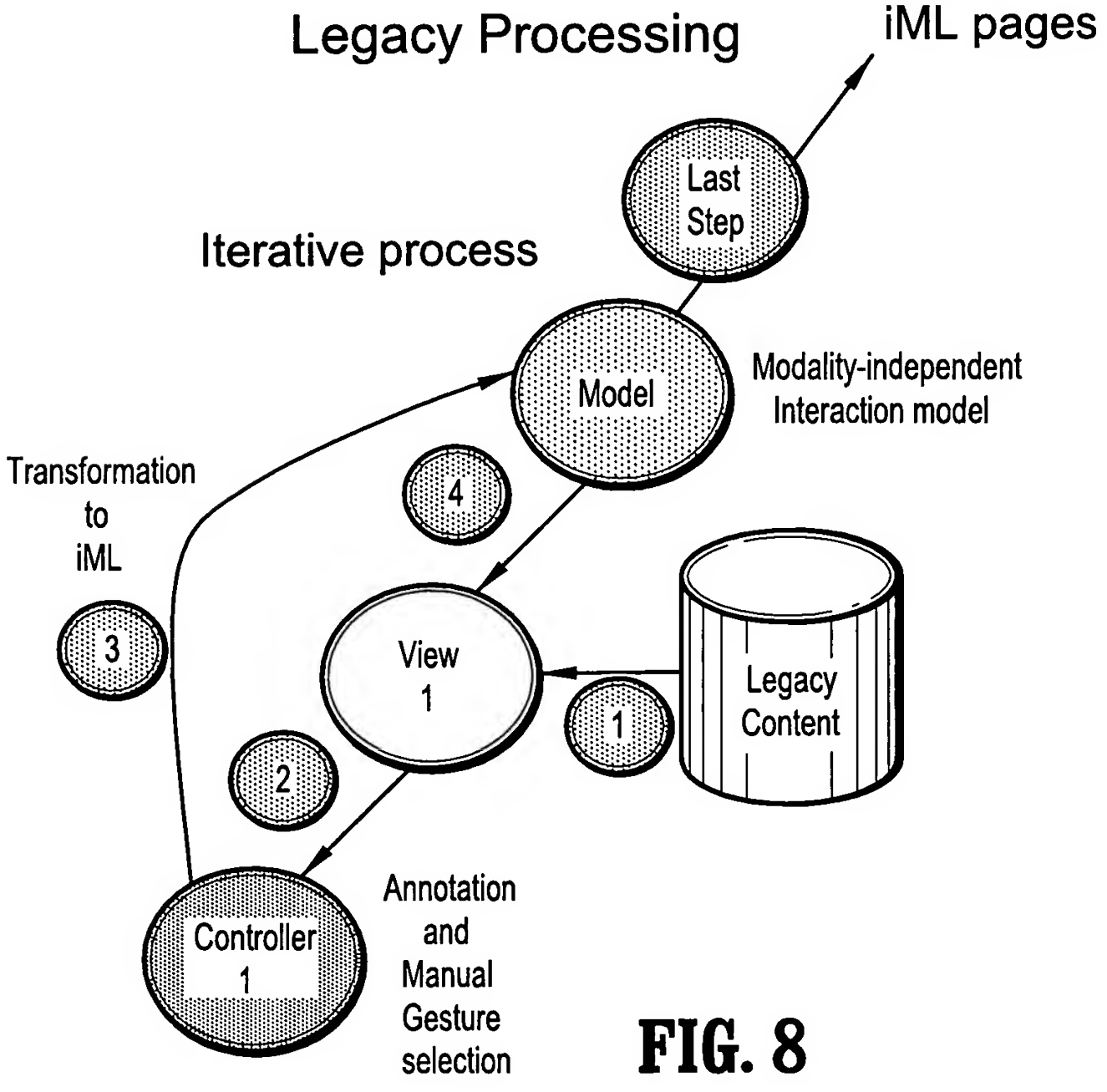
Legacy Processing
iML pages
Last
Step
Iterative process
Model
Modality-independent
Interaction model
Transformation
to
iML
4
3
View
1
Legacy
Content
1
2
Controller
1
Annotation
and
Manual
Gesture
selection

FIG. 8

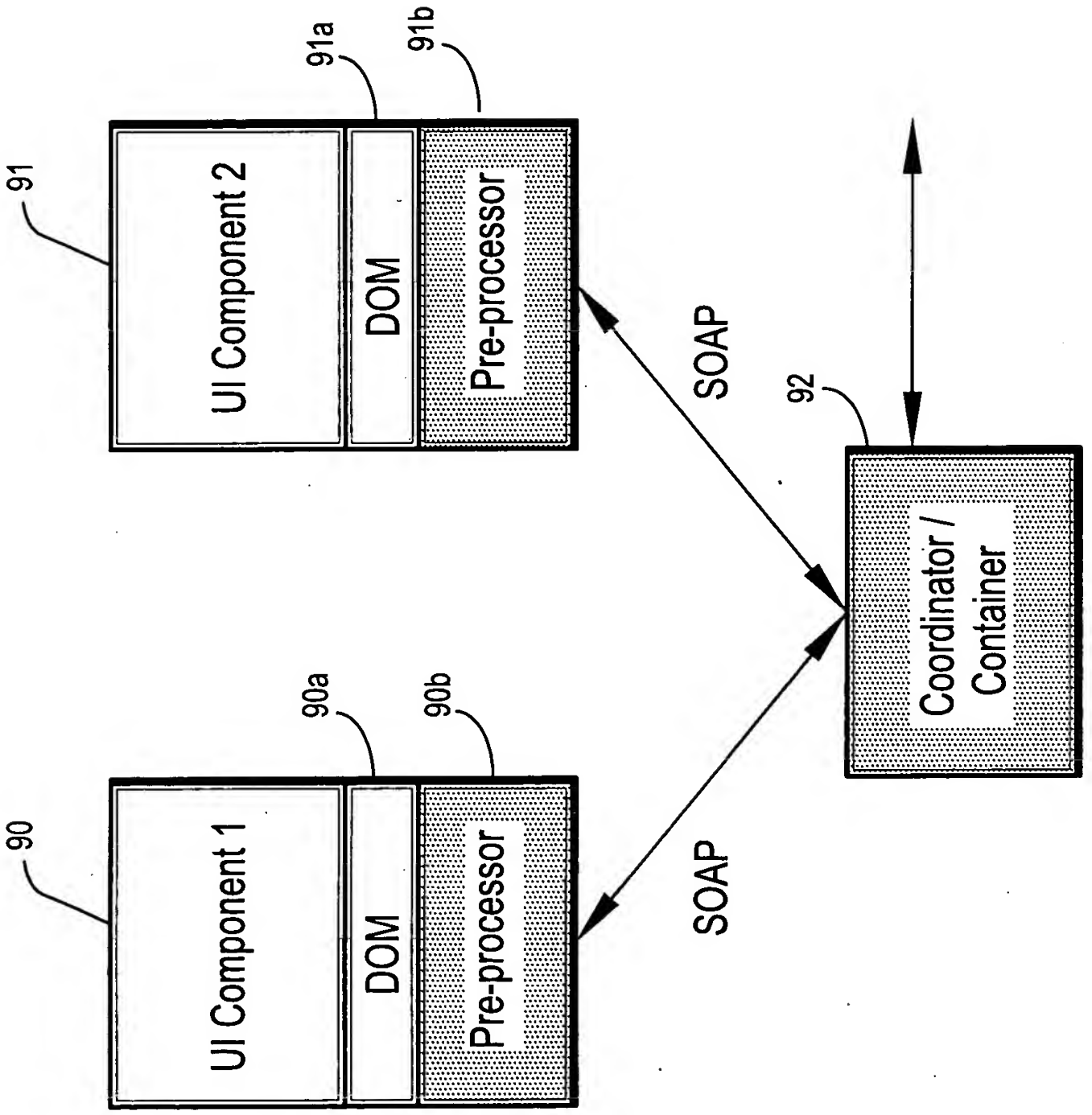
91
91a
91b
UI Component 2
DOM
Pre-processor
SOAP
92
Coordinator / Container
SOAP
90
90a
90b
UI Component 1
DOM
Pre-processor

FIG. 9